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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,434

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Hiroyuki Fujimura

2005-2079A

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EXAMINER

RINEHART, KENNETH

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3749

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/563,434	Applicant(s) FUJIMURA ET AL.	
	Examiner Kenneth B. Rinehart	Art Unit 3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-27 and 29-34 is/are rejected.
- 7) ☒ Claim(s) 11 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/5/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9, and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Both claims refer to said combustion chamber, as the claims refer to a slagging combustion chamber and a combustion chamber it is unclear as to which chamber the applicant is referring to.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6, 16, 17 are rejected under 35 U.S.C. 102(b) as being anticipated by JP2000328071. JP2000328071 shows a gasification furnace (2) for gasifying a combustible to produce a combustible gas; a combustion furnace (5) for combusting char and/or tar produced by gasification in said gasification furnace; and a return line (11) for returning a combustion gas discharged from said combustion furnace to said gasification furnace and said combustion furnace, oxygen (12) is added to the combustion gas to be returned to said combustion furnace, wherein steam or inert gas is supplied to said gasification furnace (paragraph 7), the combustion gas is supplied to a portion downstream of said gasification furnace (fig. 1), said gasification 25

furnace has a temperature of 350 to 950°C (paragraph 28), a gas cooling apparatus for cooling the combustible gas discharged from said gasification furnace to remove moisture from the combustible gas, a gas cooling apparatus for cooling the combustion gas discharged from said combustion furnace to remove moisture from the combustion gas (h,13,14).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP2000328071. JP2000328071 shows a gasification furnace (2) for gasifying a combustible to produce a combustible gas; a combustion furnace (5) for combusting char and/or tar produced by gasification in said gasification furnace; and a return line (11) for returning a combustion gas discharged from said combustion furnace to said gasification furnace and said combustion furnace, oxygen (12) is added to the combustion gas to be returned to said combustion furnace, wherein steam or inert gas is supplied to said gasification furnace (paragraph 7), the combustion gas is supplied to a portion downstream of said gasification furnace (fig. 1), said gasification furnace has a temperature of 350 to 950°C (paragraph 28). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the combustion gas to be returned to said gasification furnace has an oxygen concentration of 5 % or less, said combustion furnace has a temperature of 600 to 1000°C, since where the general conditions of a

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claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Claims 8, 13, 18-21, 22, 23, 24, 25, 30, 33,34, are rejected under 35 U.S.C. 103(a) as being unpatentable over JP2000328071 in view of WO02051966 AND EP1030150A1.

JP2000328071 discloses a gasification furnace (2) for gasifying a combustible to produce a combustible gas; a combustion furnace (5) for combusting char and/or tar produced by gasification in said gasification furnace; and a return line (11) for returning a combustion gas discharged from said combustion furnace to said gasification furnace and said combustion furnace, oxygen (12) is added to the combustion gas to be returned to said combustion furnace, wherein steam or inert gas is supplied to said gasification furnace (paragraph 7), the combustion gas is supplied to a portion downstream of said gasification furnace (fig. 1), said gasification furnace has a temperature of 350 to 950°C (paragraph 28). WO02051966 teaches a slagging combustion furnace for melting ash by using a portion of the combustible gas produced by gasification in said gasification furnace, a high-temperature furnace for pyrolyzing tar in the combustible gas discharged from said gasification furnace (54, figs. 5 and 11,10) for the purpose of melting ash. It would have been obvious to one of ordinary skill in the art to modify JP2000328071 by including a slagging combustion furnace for melting ash by using a portion of the combustible gas produced by gasification in said gasification furnace, a high-temperature furnace for pyrolyzing tar in the combustible gas discharged from said gasification furnace as taught by WO02051966 for the purpose of melting ash. EP1030150A1 teaches integrated (abstract) for the purpose of providing a compact design. It would have been obvious to one of ordinary skill in the art to modify JP2000328071 by including integrated as taught by

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EP1030150A1 for the purpose of providing a compact design so that less space is required. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the combustion gas to be returned to said gasification furnace has an oxygen concentration of 5 % or less, said combustion furnace has a temperature of 600 to 1000°C, since where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. The applicant is merely combining prior art according to known methods to yield predictable results.

Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP2000328071 in view of WO02051966 and Fujiu (4231303). JP2000328071 discloses a gasification furnace (2) for gasifying a combustible to produce a combustible gas; a combustion furnace (5) for combusting char and/or tar produced by gasification in said gasification furnace; and a return line (11) for returning a combustion gas discharged from said combustion furnace to said gasification furnace and said combustion furnace, oxygen (12) is added to the combustion gas to be returned to said combustion furnace, wherein steam or inert gas is supplied to said gasification furnace (paragraph 7), the combustion gas is supplied to a portion downstream of said gasification furnace (fig. 1), said gasification furnace has a temperature of 350 to 950°C (paragraph 28). WO02051966 teaches a slagging combustion furnace for melting ash by using a portion of the combustible gas produced by gasification in said gasification furnace (54, figs. 5 and 11) for the purpose of melting ash. It would have been obvious to one of ordinary skill in the art to modify JP2000328071 by including a slagging combustion furnace for melting ash by using a portion of the combustible gas produced by gasification in said gasification furnace as taught by WO02051966 for the purpose of melting ash. WO02051966 teaches said gasification

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furnace comprises a fluidized-bed furnace having a bed material including at least one of ..., said combustion furnace comprises a fluidized-bed furnace having a bed material including at least one(1,2) for the purpose of providing a smaller design. It would have been obvious to one of ordinary skill in the art to modify JP2000328071 by including said gasification furnace comprises a fluidized-bed furnace having a bed material including at least one of ..., said combustion furnace comprises a fluidized-bed furnace having a bed material including at least oneas taught by WO02051966 for the purpose of providing a smaller design so that a space savings is achieved. Fujiju teaches silica sand and catalyst particles (col. 3, line 27) for the purpose of fluidizing the bed. It would have been obvious to one of ordinary skill in the art to modify JP2000328071 by including silica sand and catalyst particles as taught by Fujiu for the purpose of fluidizing the bed. The applicant is merely combining prior art according to known methods to yield predictable results.

Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP2000328071 in view of WO02051966 AND EP1030150A1 as applied to claim 18 above, and further in view of Fujii (4231303). WO02051966 teaches said gasification furnace comprises a fluidized-bed furnace having a bed material including at least one of ..., said combustion furnace comprises a fluidized-bed furnace having a bed material including at least one(1,2) for the purpose of providing a smaller design. It would have been obvious to one of ordinary skill in the art to modify JP2000328071 by including said gasification furnace comprises a fluidized-bed furnace having a bed material including at least one of ..., said combustion furnace comprises a fluidized-bed furnace having a bed material including at least oneas taught by WO02051966 for the purpose of providing a smaller design so that a space savings is achieved. Fujiju teaches

silica sand and catalyst particles (col. 3, line 27) for the purpose of fluidizing the bed. It would have been obvious to one of ordinary skill in the art to modify JP2000328071 by including silica sand and catalyst particles as taught by Fujiu for the purpose of fluidizing the bed. The applicant is merely combining prior art according to known methods to yield predictable results.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP2000328071 in view of WO02051966 AND EP1030150A1 as applied to claim 18 above, and further in view of Fujinami (6283048). Fujinami teaches a water spray gas cooler for spraying water on the combustion gas discharged from said combustion furnace (30) for the purpose of cooling the slag. It would have been obvious to one of ordinary skill in the art to modify JP2000328071 by including a water spray gas cooler for spraying water on the combustion gas discharged from said combustion furnace as taught by Fujinami for the purpose of cooling the slag. The applicant is merely combining prior art according to known methods to yield predictable results.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP2000328071 in view of Fujinami (6283048). JP2000328071 discloses a gasification furnace (2) for gasifying a combustible to produce a combustible gas; a combustion furnace (5) for combusting char and/or tar produced by gasification in said gasification furnace; and a return line (11) for returning a combustion gas discharged from said combustion furnace to said gasification furnace and said combustion furnace, oxygen (12) is added to the combustion gas to be returned to said combustion furnace, wherein steam or inert gas is supplied to said gasification furnace (paragraph 7), the combustion gas is supplied to a portion downstream of said gasification furnace (fig. 1), said gasification furnace has a temperature of 350 to 950°C (paragraph 28). Fujinami teaches a water spray gas cooler for spraying water on the combustion gas discharged

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from said combustion furnace (30) for the purpose of cooling the slag. It would have been obvious to one of ordinary skill in the art to modify JP2000328071 by including a water spray gas cooler for spraying water on the combustion gas discharged from said combustion furnace as taught by Fujinami for the purpose of cooling the slag. The applicant is merely combining prior art according to known methods to yield predictable results.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP2000328071 in view of Hamilton (4411204). JP2000328071 discloses a gasification furnace (2) for gasifying a combustible to produce a combustible gas; a combustion furnace (5) for combusting char and/or tar produced by gasification in said gasification furnace; and a return line (11) for returning a combustion gas discharged from said combustion furnace to said gasification furnace and said combustion furnace, oxygen (12) is added to the combustion gas to be returned to said combustion furnace, wherein steam or inert gas is supplied to said gasification furnace (paragraph 7), the combustion gas is supplied to a portion downstream of said gasification furnace (fig. 1), said gasification furnace has a temperature of 350 to 950°C (paragraph 28), a ... between the combustion gas discharged from said combustion furnace and the combustion gas to be returned to said gasification furnace and said combustion furnace (figs). Hamilton teaches a fluidizing gas heater for exchanging heat (20) for the purpose of exchanging heat. It would have been obvious to one of ordinary skill in the art to modify JP2000328071 by including a fluidizing gas heater for exchanging heat as taught by Hamilton for the purpose of exchanging heat to heat the gas to improve thermal efficiency. The applicant is merely combining prior art according to known methods to yield predictable results.

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP2000328071 in view of WO02051966 AND EP1030150A1 as applied to claim 18 above, and further in view of Hamilton (4411204). JP2000328071 discloses a gasification furnace (2) for gasifying a combustible to produce a combustible gas; a combustion furnace (5) for combusting char and/or tar produced by gasification in said gasification furnace; and a return line (11) for returning a combustion gas discharged from said combustion furnace to said gasification furnace and said combustion furnace, oxygen (12) is added to the combustion gas to be returned to said combustion furnace, wherein steam or inert gas is supplied to said gasification furnace (paragraph 7), the combustion gas is supplied to a portion downstream of said gasification furnace (fig. 1), said gasification furnace has a temperature of 350 to 950°C (paragraph 28), a ... between the combustion gas discharged from said combustion furnace and the combustion gas to be returned to said gasification furnace and said combustion furnace (figs). Hamilton teaches a fluidizing gas heater for exchanging heat (20) for the purpose of exchanging heat. It would have been obvious to one of ordinary skill in the art to modify JP2000328071 by including a fluidizing gas heater for exchanging heat as taught by Hamilton for the purpose of exchanging heat to heat the gas to improve thermal efficiency. The applicant is merely combining prior art according to known methods to yield predictable results.

Allowable Subject Matter

Claims 11, and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 9 and 26 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth B. Rinehart whose telephone number is 571-272-4881. The examiner can normally be reached on 7:10 -4:10.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven McAllister can be reached on 571-272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kbr

/Kenneth B Rinehart/
Primary Examiner, Art Unit 3749

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/Steven B. McAllister/

Supervisory Patent Examiner, Art Unit 3749

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